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ABSTRACT

A study investigated the possible relationship between college French teachers' cognitive style and their predictions of student performance. Four American-born French instructors and their 84 students at two state-supported universities formed the sample. The results suggest that the field-independent teachers may display more competence in predicting academic ability in both field-dependent and field-independent students, supporting previous research findings. It is proposed that these teachers may perceive the field-dependent students as needing inordinate help in developing strategies and hypotheses and cause the teachers to have higher expectations for the field-dependent student. This suggests that the mismatch of teacher and student cognitive style may have serious consequences in the college classroom, since teacher attributions play a vital role in determining student achievement level. It may be that a field-independent instructor has a more positive effect on student performance. Further research into the use of teacher cognitive style in the classroom is warranted. (MSE)

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COGNITIVE STYLE AND IMPRESSIONS OF STUDENT ACHIEVEMENT IN COLLEGE FRENCH CLASSES

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Introduction

Individual differences and psychological differentiation have long been a concern to the foreign language teacher seeing that conceptual tempos and selective strategies differ among students. Cognitive styles represent perceptual problem-solving strategies; and an area often identified to explain perceptual problem-solving is the concept of field-independence/field-dependence. Specifically, Witkin's cognitive style construct has been demonstrated in selective literature in foreign language education (Hansen and Stansfield, 1982; Tuttle, Guitart, and Zampogna, 1979). The general literature on cognitive styles suggests that field orientation may be an issue in the social interaction between teachers and students (Witkin, 1976, 1977). Many studies have also explored the consequences of a match/mismatch of student to teacher cognitive style in the classroom or any such dyad in which one must interact socially (DiStefano, 1970; Folman, 1973; Greene, 1973; Lockheed, 1977; Packer and Bain, 1978; Sousa-Poza and Rohrberg, 1976). These studies suggest that teachers and students who are matched may have a more optimum environment for learning. This statement is not surprising seeing that a basic paradigm in interpersonal attraction derives from the hypothesis that persons with similar attitudes may be more attracted to one another (Bryne, 1971).

Background

Witkin, Moore, Goodenough, and Cox (1977) discovered that simple and complex figures embedded in a geometric field might serve as an approach to examine self and nonself aspects of differentiation. Individual differences in apprehension of simple figures as discrete from the surrounding field or embedded in the field became designated as field-independent and field-dependent persons respectively. Witkin et al. (1977) also found that teachers differed in their cognitive styles, in their perceptions of students, and in their expectations of students. On the other hand, several studies suggested that response styles by students appeared to be a function of teacher expectations and of cognitive styles (DiStefano, 1970; Hansen and Stansfield, 1982; James, 1973; Saracho, 1980).

The research to date appears to confirm that field-independent pupils and teachers are interested in abstract, organizational and theoretical tasks (Biggs, Fitzgerald, and Atkinson, 1971). Field-independent individuals tend to learn under conditions of intrinsic motivation (Steinfeld, 1973). Field-independent individuals have also been found to demonstrate a preference for solitary, non-social situations (Witkin et al. 1977). Evidence from this research suggests that field-independent individuals tend to be individualistic, impersonal, and oriented toward analytical and managerial fields such as mathematics, physics, chemistry, medecine, and engineering (DiStefano, 1970; Witkin et al., 1977).

Field-dependent people have been observed to be attentive to social frames of reference (Busch and DeRidder, 1973). Their social orientation makes them adept at learning and remembering social material and their references (Fitzgibbons, Goldberger, and Eagle, 1965). In contrast to the analytical field-independent individual, field-dependent people tend to be gregarious, socially interactive, and prefer face-to-face relationships close to others (Green, 1976). Their social orientation guides the field-dependent person toward teaching, business, psychology, and the social sciences (Witkin, Moore, Goodenough, and Cox, 1977).

Witkin et al. (1977) found that field-dependent teachers also tended to employ student interactive techniques, discovery approaches, open classroom discussion, and externally defined goals. The field-independent teacher was described as preferring lectures, structured class activities, directives in giving evaluations and feedback, and analytic procedures.

Participants in the schooling process, that is teachers and students, interact socially; the consequences of a match/mismatch in cognitive style in a teacher-pupil dyad may be, therefore, of some import (DiStefano, 1970; Greene, 1973; Jones and Aiello, 1973). Such research suggests that expectations about student achievement may be a function of an optimum match between the cognitive style of the teacher and the pupil. This match of cognitive styles proved to be of vital interest in the DiStefano (1970) study in which students and teachers who were mismatched tended to view each other negatively. Witkin (1976) and Witkin et al. (1977) found that a "match" in cognitive style might facilitate social interaction if there was a shared mode of communication, an atmosphere of cooperation, and similar personality characteristics.

Evidence from Witkin et al. (1977) suggests that individual differences among subjects, such as gender, may serve as an important independent variable in studies of cognitive match/mismatch studies. Hansen and Stansfield (1982) found that field-independent females performed better in introductory Spanish at the University of Colorado regardless of the field orientation of the instructor. The tendency of females to be slightly more field-independent has been reported by Witkin (1971).

The purpose of this study was to determine the importance of matching cognitive styles of pupils to college French instructors. The research question was: is there a relationship between the cognitive styles of college French instructors and their discrepancies in ranking matched and mismatched pupils on grade expectations and actual academic performance in a French 101 course?

Design of the Study

Subjects

Nine college teachers from three state-supported universities were oriented individually by letter and by a visit from the investigator. The instructors were informed that the study involved their students of French 101, and how and when the Group Embedded Figures Test (Oltman, Raskin, and Witkin, 1971) was to be administered. The teachers were informed that their students would participate in normal course assignments and testing; however, during the third week of the semester, the students and instructors would complete the Group Embedded Figures Test or GEFT, and one personal data sheet. Further, there would be no penalty for not participating in the study, and anonymity would be maintained.

Four instructors (3 females and 1 male) and their students (N= 84) in four French 101 classes at two state-supported universities formed the defined sample. The French instructors were American-born with 3-7 years of teaching experience. All instructors held the Master's degree in French literature and language and were in the beginning phases of their college teaching careers.

With the use of an assigned identification number from 1-60, 25 subjects were randomly selected from each teacher's list of students. Unfortunately, ten students decided not to participate in this investigation and six students were absent. Mean age of the student participants was 19 years old. All student participants were absolute beginners in French.

Treatment

French 101 was a first semester college course which emphasized the four basic language skills: listening, speaking, reading, and writing. The course was designed to introduce the French language to students who had little or no French. The course and the textbook focused upon functional communication: self-expression within a familiar context. Classes met three times per week for 50-minute periods, or two times per week for 75-minute periods. One hour was devoted to laboratory practice. On occasion, filmstrips, computer-assisted instruction and/or audio-tapes were used in the classroom.

Procedures

The GEFT is based upon individual differences in performance as measured by a subject's reaction to a geometric figure, and his or her perception of part of a field as discrete or embedded in a surrounding field (Witkin et al., 1977). In other words,

this instrument requires the subject to perceive and outline a simple geometric figure embedded within a more complex figure (Hansen and Stansfield, 1982). Reliabilities for groups of college students are reported by Witkin (1971) as .82 for males and .79 for females.

The instructors were shown 24 pairs of figures from the GEFT (Oltman, Raskin, and Witkin, 1971). The mean score was subsequently computed, and instructors with mean scores greater than 14 were classed as field-independent. Instructors whose scores were below 14 were characterized as field-dependent. Thus, two instructors of each feild proclivity were selected for this investigation. The field proclivity of the student sample (N= 84) was determined by the GEFT two days later.

Student respondents were categorized in relation to other subjects in their course; therefore, subjects were described as field-independent if the score obtained on the GEFT was above the mean for all student subjects. Field-dependent students were classified in this category if the mean score obtained on the GEFT was below the mean for all student subjects. The cognitive style was matched or mismatched with the style of the instructor.

Grade expectations varied at four levels: 4 = A; 3 = B; 2 = C; 1 = D. These rankings of grade expectations were compared with the final examination score which varied at the same four levels. Discrepancy scores were computed as deviations from the grade expectations and the final examination grade; that is, if teacher grade expectations deviated negatively or positively from the grade of subjects (matched or mismatched) on the final examination.

Analysis of Data

A 2 X 2 analysis of variance (ANOVA) design was utilized to analyze the data from this investigation with cognitive style of the instructor (field-dependent/field-independent) and a match/mismatch of the style of the instructor and pupil as the main effects. The unit of analysis was the mean deviation from the matched or mismatched group. GEFT mean was set at 14 for both instructors and pupils. The alpha level was set at .05. The summary table of the 2 x 2 analysis of variance (ANOVA) using disproportional cells is found in Table 1.

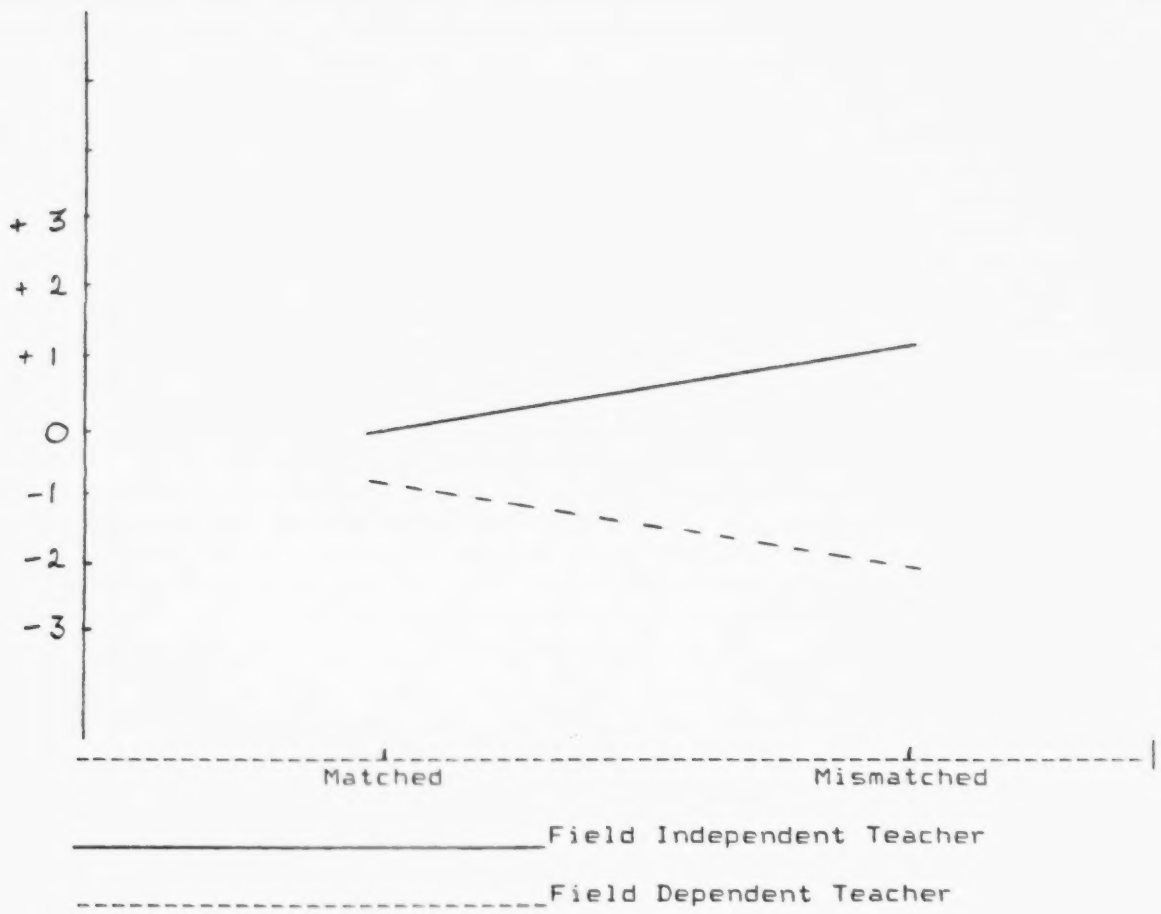
TABLE 1
Summary Table for the Two-Way ANOVA

Source	df	SS	MS	F	Fcv
FI/FD	1	7.02	7.02	6.21*	3.96
Match/Mismatch	1	15.93	15.93	14.10**	3.96
Interaction	1		5.02	4.44*	3.96
Error	80		1.13		
Total	83				

*p < .05

The analysis of variance indicated significant differences at the .05 level of significance for cognitive style (field-dependence/field-independence). The F-ratio for match/mismatch, the second main effect, was significant at the .01 level of significance. The interactive effects were significant at the .05 level of significance; therefore, the effects of the levels of the first independent variable upon the dependent variables or scores were not the same across the levels of the second independent variable. It appears that interactive effects evidenced a relationship between the discrepancies in ranking matched and mismatched pupils in regard to academic achievement, and cognitive styles of teachers. Figure 1 illustrates the interactive effect using the mean deviations.

Figure 1 Plots of Ordinal Interaction of Discrepancy Scores



The profile of the interactive effects indicates:

1. Field-independent teachers tended to expect more of the field-dependent pupil or the mismatched student.

2. Field-independent French instructors tended to have greater accuracy in predicting academic success of both field types of students.

3. Field-dependent French teachers tended to have reduced ability in predicting academic competence in both field proclivities (matched/mismatched).

Discussion

The purpose of this investigation was to determine if there was a relationship between cognitive styles of college French teachers and their discrepancies in rating matched and mismatched students on grade expectations and actual performance in the course. The results suggested that field-independent French teachers may display more competence in predicting academic ability in students of both field proclivities. As such, this investigation supports previous research (DiStefano, 1970; Garrott, 1984; James, 1973; Saracho; 1980) in which field-independent teachers and students tended to view one another more positively. Saracho (1980) emphasized that field-independent teachers had few difficulties in identifying and evaluating the outgoing field-dependent pupil. On the other hand, the field dependent teacher may feel a degree of insecurity or perplexity when faced with the field-independent student, a student who is often analytical, abstract, and cogitative (Witkin, Dyk, Faterson, Goodenough, and Karp, 1974).

The field-dependent pupil, whose need for considerable social and interpersonal support, may be perceived by the field-independent teacher as needing inordinate help in developing strategies and hypotheses. This dependent behavior may simply cause field-independent instructors to have higher expectations for the field- dependent student (Saracho, 1980).

It remains clear from the preceding discussion that the mismatch of teacher and pupil cognitive styles may have serious consequences in the college classroom. Teacher attributions play a vital role in determining the achievement level of students. It is known that teachers spend less time with students for whom they have low expectations (Felsenthal, 1970). When teacher expectations challenge students to achieve, an expansive and exhilarating process is set in motion (Covington and Beery, 1976). It may be that greater interpersonal attraction and better learning can be fostered when both teacher and pupil share a common cognitive style.

It is also clear that the present core of instructors can not change their field proclivity overnight: the results of

this investigation suggest that a field-independent instructor may have a more positive effect on student performance. A question that may need to be examined in further research is:

1. If field-dependent teachers have been found to be masters of social skills, how can these instructors take advantage of the positive effect on expectations characteristic of field-independent teachers?

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